Dr. (Mrs.) Chakravadhanula Manikyamba

DAE - Raja Ramanna Chair (RRC)

Formerly
Emeritus Scientist,
Chief Scientist & Head,
Geochemistry Division,
CSIR-National Geophysical Research Institute,
Uppal Road, Hyderabad - 500 007, Telangana, India.

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Field of Specialization:

Precambrian Geology and Geochemistry
Plate Tectonics, Crustal Evolution and Metallogeny
Precambrian biogeochemical processes

Educational Qualifications:

MSc (1987 - Inst. of Chemists, Calcutta)
Ph. D (1992 - Osmania University, Hyderabad)

Research Experience:

Forty-five (45) years of experience in the field of Geology and Geochemistry.

Total citations: 4147 **h-index: 39** **i10-index: 79**
(Source: https://scholar.google.com/citations?user=D10Fq2oAAAAJ&hl)

Teaching Experience:

As a **Professor** of Academy of Scientific & Innovative Research (AcSIR), participated in the design of curriculum for course units for the Geology students of NGRI-AcSIR, took classes for students in the field of Geochemistry with special reference to trace element geochemistrystarting from Accretion of Earth, Solid Earth and its geochemical system, behavior elements, analytical procedures, plate tectonic concepts, geochemistry of crust (oceanic and continental), mantle and core and Precambrian rock associations, etc.

Positions held at NGRI:

01.07.2025 – till date	DAE-Raja Ramanna Chair
04.11.2020- 30.06.2025	Emeritus Scientist
08-01-2016 - 30.06.2020	Chief Scientist
08-01-2010- 07-01-2016	Senior Principal Scientist
08-01-2006 - 07-01-2010	Principal Scientist
08-01-2001 - 07-01-2006	Scientist 'EI'
02-11-1998 - 07-01-2001	Scientist 'C'
02-11-1994 - 01-11-1998	Scientist 'B'
01-04-1993 - 01-11-1994	Technical Officer -A
01-04-1988 - 31-03-1993	Senior Technical Assistant
01-02-1985 - 31-03-1988	Junior Technical Assistant
01-02-1981 - 31-01-1985	Senior Lab Assistant
23-09-1980 - 31-01-1981	Junior Lab Assistant

Awards and Honors:

1995 - *CSIR Young Scientist Award* in Earth Sciences
1999 - *Dr. B.P. Radhakrishna Prize*-1999, Geological Society of India, Bangalore
2002 - *National Mineral Award,* Ministry of Mines, Govt. of India
2008 - *Andhra Pradesh Scientist Award*, A.P. State Council of Science andTechnology (APCOST)
2009 - *Gold Medal* for outstanding contributions, Indian Society of Applied Geochemistry
2013 - *Geoscience Frontiers Best Paper Award,* Beijing, China.
2019 - National Award for Woman Scientist from Ministry of Earth Sciences (MoES)
2019 - Prof. W.D. West Memorial Award from Indian Science Congress Association (ISCA)
2023 - Woman Scientist Award from Geological Society of India (GSI), Bangalore
2023 – Excellence Award from Society of Geosciences and Allied Technologies, Bhubaneswar

Membership of Scientific Societies:

- Life Member, Geological Society of India, Bangalore
- Founder Member, Academy for Science, Technology and Communication (ASTC)
- Life Member, Institute of Chemists (India), Calcutta
- Life Member, South Asian Association of Economic Geologists, Dhanbad
- Life Member, Mineralogical Society of India, Mysore
- Life Member, Indian Science Congress Association, Calcutta
- Life Member, Indian Geophysical Union, Hyderabad
- Elected Fellow of Telangana Akademi of Sciences
- Elected Fellow of A. P. Akademi of Sciences
- Life Member, Association of Applied Geochemistry, Hyderabad.
- Life Member, Administrative Staff College of India (ASCI) Association, Hyderabad
- Elected as a Steering Comm. Mem. for the *Intl. Assn. of Gondwana Res*.-2017
- President, Academy for Science, Technology and Communications (ASTC, 2023-present)

Recognized PhD supervisor at:

- AcSIR (Academy of Scientific and Innovative Research-CSIR, NGRI)
- Osmania University
- Andhra University
- University of Calcutta

Ph.D. Supervision: Completed:13; Ongoing: 1

1. Dr. Tarun C. Khanna	2007; Osmania University, Hyderabad "Geochemistry and Tectonic setting of the metavolcanic rocks of Gadwal greenstone bel eastern Dharwar craton, India"
2. Dr. Prachiti Kanakdande	2013; Osmania University, Hyderabad "Geochemical studies on Phanerozoic succession of southeastern part of the Godavari Basin: implications for the tectonic evolution of East Coast of India"
3. Dr. Adrija Chatterjee	October, 2017; Osmania University, Hyderabad "Geochemistry of magmatic rocks in the Kadiri greenstone belt: implications on the crustal growth and mineralization in EDC"
4. Dr. M. Rajanikanta Singh	October, 2017; Andhra University, Visakhapatnam "Geochemitry, petrogenesis and tectonic setting of metavolcanic rocks in and around Jagannathour Noamundi-Malangtoli Singhbhum Craton, eastern India"
5. Dr. Arubam C. Khelen	25th January, 2018; AcSIR, CSIR-NGRI "Geological, Geochemical, and Isotopic studies on the Precambrian stromatolitic carbonates of Dharwar Craton and Cudappah basin: Implications on biogeochemical processes and paleo-environment"

6. Dr. Th. Dhanakumar Singh	2nd June, 2018; Andhra University, Visakhapatnam “Petrology and geochemistry of mafic flows from the Vempalle formation, Cuddapah basin, India: implications on their evolution in an ocean-continent tectonic setting”
7. Dr. P. Harini	15th July, 2018; Osmania University, Hyderabad “GIS and SWAT based Hydrological modeling of Krishna River Basin with special reference to some parts of Telangana and A.P."
8. Dr. Silpa Vuba	5th December, 2019; Andhra University, Visakhapatnam "Geochemical and isotopic studies in the Godavari River sediments and water samples: implications on anthropogenic and climatic changes"
9. Dr. Md. Taufique Khan Warsi	0n 19th December, 2019 Evaluating Hydrodynamics of vadose and aquifer Zones with the integrated approach of Electrical method, Hydrological techniques and tracers techniques and development of nascent carbon Nano Particles as water tracer.
10. Dr. Arijit Pahari	3rd January, 2022; Osmania University, Hyderabad Geochemistry of volcano-sedimentary sequences of Kudremukh greenstone belt, Western Dharwar Craton and its implications on Tectonic setting and Mineralization
11. Dr. C.S. Sindhuja	3rd March, 2022; Osmania University, Hyderabad Geochemical and Isotopic Studies on Carbonaceous Phyllites/Shales from Dharwar Craton and Cuddapah Basin: Implications on

	Depositional Environment and Gold Mineralization
12. Dr Madhuparna Paul	Awarded on 12th July, 2023; University of Calcutta "Petrology And Geochemistry of Mafic Rocks Of Iron Ore Group (IOG) In Koira-Chakradharpur Area, Singhbhum Craton, Eastern India"
13. G. Harshitha	Submitted on 3rd September, 2025; Osmania University "Geochemistry of Manganese formations from the greenstone belts of Dharwar Craton: evaluation of its role in Archean biogeochemical processes".

M Sc Dissertation Supervised	**Mentoring Summer Trainees/Students**
➢ Mr. K.S.V. Somashekar, Andhra University; ➢ Mr. Ranjot Singh, Nanded University, ➢ Ms. Mageswari, Central Univ. of Karnataka, ➢ Mr. Vrijendra Singh, ISM, Dhanbad, ➢ Mr. K.T. Sreejesh, Osmania University ➢ Ms. Ch. Keziya, University of Hyderabad. ➢ Mr. Prasanth Kumar, University of Hyderabad	Mr. Raghukul, Sikkim University, ➢ Ms. Kaberi Misra, Sikkim University, ➢ Ms. Meghna Khandelwal, ISM, Dhanbad, ➢ Mr. Bhibasbata Dasgupta, Indira Gandhi National Tribal University, Amarkantak, M.P. ➢ Mujahid Baba, Osmania University.

Visiting Positions/Foreign assignments:

- Visited Oulu, Finland during 10-15th August, 1998. Attended the International conference and fieldwork; presented a paper on “Archean pseudo-ophiolites from Sandur greenstone belt of Dharwar craton”.

- Visiting Scientist at the Department of Earth Sciences, University of Saskatchewan, Saskatoon, Canada to conduct collaborative research work with Prof Robert Kerrich; Learned the advanced analytical techniques and carried out laboratory studies on the volcanic rocks from different greenstone belts of Dharwar craton. During 2nd August 2002 to 5th November, 2002.

- Visited Florence, Italy during 20-28th August 2004. Presented four papers at the 32nd International Geological Congress including one Invited presentation on the new finding of boninites from Gadwal belt of Dharwar Craton, India.

- Visited Germany during 29th -5th September, 2004 to deliver an Invited talk at GEOMAR on "Greenstone belts of Dharwar Craton"

- Visited Oslo, Norway during 6th-14th August, 2008 and presented a paper in the 33rd International Geological Congress.

- Visited Germany during15th-20th August, 2008 to deliver an invited talk on the "Paleo-subduction zones from the greenstone belts of Dharwar craton, India" at GEOMAR, Kiel, Germany.

- Visited China to receive the Best Paper Award from Geoscience Frontiers during 2nd-10th November, 2013; participated in the GSF Annual Meeting and delivered an Invited talk.

- Visited Malaysia to deliver Invited talk on “Concatenation of biogeochemical processes and mineralization in the Archean oceans” at the Annual convention of International Association for Gondwana Research -2024 during 18-22nd November, 2024.

Participation in Training Courses, Invited Lectures, etc.

Delivered several Invited Lectures, Key-note Addresses, Student Orientation Lectures, convened the Special theme sessions for National and International Seminars / Symposia and Workshops, conducted Training Courses, participated in the Panel discussions, Chaired the sessions in conferences and symposia besides evaluating the science projects in the children science congress at state level and national level.

Conducted **Skill Development programmes for 2 weeks during 2018, 2019 at CSIR-NGRI**

Projects handled

Title of Project	Project Category	Project Value (Rs.)	Role
Atomic and Rare Earth element potential in Precambrian strata: evaluation of phosphorites, pyroclastic rocks and weathered granitic profiles from southern India	DAE-RRC	1.5 lakhs each year	Project Leader
Spatio-temporal geochemical progression and mantle heterogeneity in the Dharwar Craton: its correlation to the geochemical pathways and mineralization (4/11/2020 to 30.06.2025)	CSIR-Emeritus Project	~one lakh each year	Project Leader
Geodynamics and Metallogeny of parts of the East Indian Shield with specific reference to Diamond, Iron Ore and Chromitite-PGE occurrences (GeoMet)	Lead 12th FYP	31,00,000	Activity In-charge
India Deep Earth Exploration Programme (INDEX) (2012-2017) for the Subtheme W.P. 2.2.	12th Five-year plan	65,50,000	Project Leader
Integrated geological, petrological, geochemical, paleomagnetic studies and metallogeny in the selected geodynamic provinces of India MLP6201-28 (CM)	Main Lab Project	-----	Project Leader
SSP 422-28 (CM)-High Resolution Inductively Coupled Plasma Mass Spectrometry (HR ICP-MS)	Contract R & D	-----	Project Leader
SSP 423-28 (CM) -X-Ray Florescence Spectrometry (XRF)	Contract R & D	-----	Project Leader
Geological, geochemical and PGE Investigations of Precambrian mafic magmatismof Singhbhum Craton, Eastern India: implications on Mantle processes (DST Project (2012-2016).	DST	14,66,000	Project Leader
Biogeochemical and atmospheric changes during Archean and Proterozoic transition: Geochemical and isotopic studies from greenstone belts of Dharwar craton and Cuddapah basin (MoEs Project 2013-2017).	MoES	41,05,880	Project Leader
Geochemical Investigations of the volcanic rocks of Sigegudda-Jonnagiri greenstone belts of Dharwar Geotransect: identification of mantle components and crustal growth (2008 – 2011)	DST	4,80,000	Project Leader
Geological, Geochemical and isotopic studies in the Sandur and Kadiri greenstonebelts: Mantle Processes beneath the Dharwar Craton (2007 – 2010).	DST	13,38,000	Project Leader
Geology, geochemistry, tectonothermal evolution and mineralization of the Narayanapet-Gadwal schist belt and surrounding granitoids (2001-2004)	DST	6,33,000	Project Leader
Geochemistry of the Gold mineralizing fluids from the Penakacherla greenstone belt, Andhra Pradesh (1995-2007)	CSIR Young Scientist Project	10,000,00	Project Leader

Geochemistry and Isotopic characteristics of the Trap rocks from Rajahmundry (2007-2012)	CSIR Supra Inst. Project		Team Member
Geochemical Investigations for gold mineralization inf BIFs in Chitradurga, Bababudan, Hutti and Sandur schist belts. (2001-2005)	DST		Team Member
Geology, Geochemistry and gold mineralization along the Precambrian Convergent margins and the related fluid processes (1998-2001)	Main Lab Project		Team Member
Geochemical signatures of crust-mantle interaction: magmatism and metallogeny through Geological time in selected geodynamic provinces of India (2000-2003)	Main Lab Project		Team Member
Origin of Life (1990-1995)	DST		Team Member
Precambrian of South India (1980-1987)	Indo- Russian Project (PL 480)		Team Member

Professional Services/Managerial Responsibilities:

- Students Academic Committee (SAC) Member (2014 to 2019)
- Member, Collegium Committee for Scientist 'C'
- Core committee Member (2014-2015)
- Member, Administration co-ordination committee (2013-2015)
- Member, AcSIR student selection Committee (2012 -2015)
- Member, NGRI Assessment committee
- Member, NGRI Management Committee (2007-2010).
- Member NGRI Project Fellows Recruitment (2007-2010).
- Member NGRI Stores and Purchase (2009-2010)
- Member Golden Jubilee Commemorative Volume committee 2013.
- Member for the Recruitment of Physically Challenged Employees.
- Member, Compassionate Appointments Committee (2015-2017)
- Member, Instruments Internal Audit Committee (2016-2017)

Editorial positions:

- Associate Editor, Geoscience Frontiers, Elsevier
- Associate Editor, Geological Journal, John Wiley & Sons Ltd. (2016 to July, 2025)

Other Services:

- DST-SERB Expert Committee Member in Earth and Atmospheric Sciences.
- NPDF-ECRA Expert Committee Member of DST in Earth and Atmospheric Sciences.

- CSIR - RA/SRF Committee Member in Earth and Atmospheric Sciences.
- CSIR – Recruitment and Assessment Committee Member as subject Expert.
- NGRI -Internal Assessment and Recruitment Member besides project Fellows Selection committee Member/Chairman
- Member, Board of Studies, Applied Geochemistry, Osmania University
- Ph D examiner for the Botswana International University of Science and Technology
- External examiner for the Ph D thesis from Panjab University, Chandigarh and IIT-ISM, Dhanbad
- Reviewer for 1) Precambrian Research, 2) Chemical Geology, 3) Lithos, 4) Gondwana Research, 5) Geological Society of India, 6) Asian Journal of Earth Sciences, 7) Geological Journal, 8) Canadian Journal of Earth Sciences, 9) Geoscience Frontiers, 10) Ore Geology Reviews, 11) Geological Society of London, 12) Arabian Journal of Geosciences,13) Journal of Earth System Sciences, 14) Indian Society of Applied Geochemistry, 15) Geosystems and Geoenvironment.

Patents and copyrighted material:

United States Patent No.US11725509B2 (granted on August 15, 2023; filed January 11, 2021; assigned to the Council of Scientific and Industrial Research, CSIR) by Warsi et al. (Taufique Warsi, L. Bhattacharjee, T. Suppan, Sanjeev K. Jat, K. Mohanta, R.R. Bhattacharjee, R. Ramaswamy, C. Manikyamba, T. Vinoda Rao, V.M. Tiwari) was filed by CSIR on January 11, 2021.

The patent relates to the development of a novel carbon nano dot tracer for measuring groundwater characteristics. This innovation represents an artificial, non-radioactive, environment friendly, economical and sustainable tracer, providing a novel method for deciphering solute transportation in soils. The granted patent is currently active and holds strong potential for commercialization.

The patent based on this work is under active consideration for commercialization.

Research papers published:

(# Student first-authored publications)

135	#Harshitha, G., Gonzalez-Alvarez, I., **Manikyamba, C**., D'Andres, J., Yadav, J.K., Mukherjee, M.K., 2025. Critical Mineral Potential of Indian Phosphorites: Evidence of REE enrichment in Ediacaran Sediments from the Cuddapah Basin. **Journal of Geochemical Exploration**. 280, 107918. https://doi.org/10.1016/j.gexplo.2025.107918
134	**Manikyamba, C**. (2025). Earth's habitability in a planetary framework: The Archean rock record. **Habitable Planet 1, 221-237.** https://doi.org/10.63335/j.hp.2025.0017

133	#Paul, M., Ghosh, B., Morishita, T., Tamura, A., Ray, J., **Manikyamba, C**., Patel, S.C. (2025). Importance of clinopyroxene mineral chemistry as a potential petrogenetic indicator: A case study from gabbroic intrusives from Western Iron Ore Group, Singhbhum Craton, Eastern India. **Journal of Earth System Science 134, 88**. https://doi.org/10.1007/s12040-025-02528-y
132	#Harshitha, G., **Manikyamba, C.,** Yadav, J.K., Santosh, M., Li Tang, Subramanyam, K.S.V. (2025). Archean greenstone volcanism and its spatio-temporal tectonic progression: Insights from Dharwar Craton. **Precambrian Research 416, 107674.** https://doi.org/10.1016/j.precamres.2024.107674
131	#Dhanakumar Singh, Th., **Manikyamba, C.,** Harshitha, G., Lingadevaru, M., Subramanyam, K.S.V., Pahari, A. (2024). Serpentinized dunites of the Neoarchean Shimoga greenstone belt, western Dharwar Craton, India: Insights on Ni-PGE mineralization and genesis. **Geological Journal 60, 45-63.** https://doi.org/10.1002/gj.5071
130	**Manikyamba, C.,** Upadhyay, D., Mohan, M.R. (2024). Archean crustal evolution and craton formation in peninsular India: New insights from the Singhbhum, Dharwar and Bastar cratons. Proceedings of Indian National Science Academy, 90, 167–195. https://doi.org/10.1007/s43538-024-00254-5
129	#Sindhuja, C.S., Duraiswami, R.A., **Manikyamba, C.,** Rao, B.K.N. (2024). Formation and preservation of crescent-shaped volcaniclastic imprints in Quartz-Feldspar Porphyry from Neoarchean Kadiri Greenstone belt, India. **Journal of Earth System Science 133(1) 11** doi:org/10.1007/s12040-023-02230-x
128	Sindhuja, C.S., Harshitha, G., **Manikyamba, C.**, Subramanyam, K.S.V. (2024). Geochemistry and depositional environment of fuchsite quartzites from Sargur Group, western Dharwar Craton, India. **Acta Geochimica 1-6** doi:org/10.1007/s11631-023-00661-3
127	Harshitha, G., **Manikyamba, C.**, Santosh, M., Yang, C., Krishna, A.K., Sai, V.V.S, Reddy, I.P. (2024). Paleo-Mesoarchean sedimentary record in the Dharwar Craton, India: Implications for Archean ocean oxygenation. **Geoscience Frontiers** 15, 101701. https://doi.org/10.1016/j.gsf.2023.101701
126	Hegde, V.S., **Manikyamba, C.**, Basavaraj, K.K., Hulaji, S., Korakoppa, M.M. Shalini, G. (2023). Odyssey of Archean crustal evolution of the southern Indian shield:An insight from petrogenesis of distinct Mesoarchean and Neoarchean Tronjhjemite to granite suits from the northwestern margin of the Dharwar Craton, India. **Lithos** 454-455, 107280. https://doi.org/10.1016/j.lithos.2023.107280.
125	Harshitha, G., **Manikyamba, C.,** Sridhar, B., Satyanarayanan, M., Sarma, D.S. (2023). Manganiferous clays of Dharwar Craton, southern peninsular India: Insights on Archean weathering and ore formation processes. **Geological Journal** 1-21. https://doi.org/10.1002/gj.4828

124	Singh, M.R., Manikyamba, C., Harshitha Reddy, G. (2022). Subduction related metabasalts from the western Singhbhum Craton, Eastern India- A review. **Journal of Applied geochemistry** 24(3), 174-187.
123	Harshitha Reddy, G., **Manikyamba, C.,** Dhanakumar Singh, Th. (2023). Role of depleted – MORB mantle in the genesis of basalts from the Neoarchean Eastern Felsic
	Volcanic Terrane of the Sandur greenstone belt, Dharwar Craton, India. **Journal of Geological Society of India** 99, 331-337. https://doi.org/10.1007/s12594-023-2315-z
122	Paul, M., Ray, J., Koeberl, C., Patel, S.C., Sheikh, J.M., **Manikyamba, C**., Gayen, M., Bhattacharjee, N., (2022). Petrology of Paleoarchean mafic-ultramafic rock suite of western Iron Ore Group, Singhbhum Craton, eastern India using chemistry of minerals. **Geological Magazine**, 1-18. https://doi.org/10.1017/S0016756822001170.
121	**Manikyamba, C**., Santosh, M., Subramanyam, K.S.V., Harshitha Reddy, G., Ray, J., Kar, A., Pahari, A. (2022). Forearc and back-arc mantle characteristics of the mafic-ultramafic rocks of Simlipal complex, Singhbhum Craton, India. **Lithos 422-423, 106889.** https://doi.org/10.1016/j.lithos.2022.106889
120	Dodd, M.S., Wang, H., Li, C., Towner, M., Thomson, A.R., Slack, J.F., Wan, Y., Pirajo, F., **Manikyamba, C**., Wang, Q., Papineau, D. (2022). Abiotic anoxic iron oxidation, formation of Archean banded iron formations, and the oxidation of early Earth. **Earth and Planetary Science Letters** 584, 117469. https://doi.org/10.1016/j.epsl.2022.117469.
119	**Manikyamba, C.,** Arijit Pahari, Santosh, M., Subramanyama, K.S.V., Harshitha Reddy, G. (2022). Geochemistry of basalts in unravelling the mantle processes and crustal evolution: insights from the greenstone belts of western Dharwar Craton. **Geosystems and Geoenvironment** 1 (4) 100070. https://doi.org/10.1016/j. geogeo.2022.100070 .
118	**Manikyamba, C.,** Harshitha Reddy, G. (2022). Paleo-subduction zones in the Indian cratons. Editorial, J. **Geol. Soc. India** 98, 447-450. https://doi.org/10.1007/s12594-022-2000-7.
117	Kar, A., Ray, J., Sinha, S., Kar, R., **Manikyamba, C**., Paul, M., Dey, P. (2022). Geology of the Simlipal volcano-sedimentary basin of Singhbhum revisited: a simplistic interpretation. **Jour. Geol. Soc. India** 98, 329-334. https://doi.org/101007/s12583-021-1472-5.
116	**Manikyamba, C.,** Ganguly, S., Pahari, A., (2021). Geochemical features of Bellara Trap volcanic rocks of Chitradurga greenstone belt, Western Dharwar Craton, India: Insights into MORB-BABB association from a Neoarchean back-arc basin. **Journal of Earth Science** 32, No.6, 1528-1544. https://doi.org/10.1007/s12583-021-1472-5.

115	Arijit Pahari, **Manikyamba, C.** (2022). Arc-back arc cohabitation and associated bimodal volcanism: Evidence from Neoarchean Raichur greenstone belt, Eastern Dharwar craton, India. Book Chapter in: "Geochemical Treasures and Petrogenetic Processes" **Springer book** (Eds.) John S. Armstrong-Altrin, Kailasa Pandarinath, Sanjeet Kumar Verma. p. 3-29. https://doi.org/10.1007/978-981-19-4782-7_1
114	Sindhuja, C.S., **Manikyamba, C.,** Subhojit Saha, Siva Narayanan, Sridhar, B. (2022). Geochemical and carbon isotopic studies of carbonaceous phyllites from Dharwar craton, India - Reconstruction of Precambrian depositional environment. **Precambrian Research 372, 106575.** https://doi.org/10.1016/j.precamres.2022.106575
113	Sindhuja, C.S., Arijit Pahari, **Manikyamba, C**., Santosh, M., Li Tang, Ray, J., Subramanyam, K.S.V., Paul, M., Gonzalez-Alvarez, I., P.C. Sruthi, P.C. (2022). Crustal stabilization: Evidence from the geochemistry and U–Pb detrital zircon geochronology of quartzites from Simlipal Complex, Singhbhum Craton, India. **Geoscience Frontiers** 13, 101257. https://doi.org/10.1016/j.gsf.2021.101257
112	**Manikyamba, C.,** Sindhuja, C.S., Khelen, A.C., Arijit Pahari (2022) Archean Biogeochemical Cognizance from Dharwar Craton, India – A Review. **Jour. Geol. Soc. India,** 98, 74-78.
111	Verencar, A., Saha, A., Ganguly, S., **Manikyamba, C**. (2021). Tectono-magmatic evolution of Tethyan oceanic lithosphere in suprasubduction zone fore arc regime: geochemical fingerprints from crust-mantle sections of Naga Hills ophiolite. **Geoscience Frontiers,** 12, (3), 101096. https://doi.org/10.1016/j.gsf.2020.10.003
110	Arijit Pahari, Dhanakumar Singh, Th., **Manikyamba, C**., Subramanyam, K.S.V. (2021). Understanding the role of chalcophile-siderophile elements in the petrogenesis of metabasalts of Kudremukh greenstone belt, western Dharwar Craton, India: A Platinum group elements geochemical perspective. **Jour. Earth System Science** 130 168. https://doi.org/10.1007/s12040-021-01644-9.
109	Saha, A., Hazra, A., Santosh, M., Ganguly, S., Li, S.S., **Manikyamba, C.** (2021). Episodic recycling of anicient metasomatized continental lithosphere: evidence from lower oceanic crust of the Central Indian ridge. **Lithos** 400-401, 106424. https://doi.org/10.1016/j.lithos.2021.106424.
108	Mahapatra, R.R. Mukherjee, P., Paul, M., Chakraborti, S., Ray, J., Ganguly, S., Koeberl, C., **Manikyamba, C.,** Sarkar, S., (2021) Style of fractional crystallization in basalts from the Paleoarchean western Iron Ore Group of Singhbhum Craton, Eastern India: Implications from One Atmosphere Experimental Studies, **Jour. Geol. Soc. India** 98, https://doi.org/10.1007/s12594-002

107	Sindhuja, C.S., **Manikyamba, C,** Arijit Pahari, Santosh, M., Li Tang. (2021). Metallogenesis and depositional environment of the Archean-Proterozoic carbonaceous phyllites from the Dharwar Craton, India. **Ore Geology Reviews**, 131(9):103966. https://doi.org/10.1016/j.oregeorev.2020.103966.
106	Paul, M., Ray, J., **Manikyamba, C.,** Ganguly, S., Rajanikanta Singh, M., Pachal, S., Sarkar, D., (2021). Mafic volcanic rocks of western Iron Ore Group (IOG), Singhbhum Craton, Eastern India: Geochemical evidence for ocean-continent convergence. **Geological Journal**, 56(1), pp. 102-129. DOI: 10.1002/gj.3944.
105	**Manikyamba,** C., Ghose, N.C., Sohini Ganguly, Arijit Pahari, Sindhuja, C.S. (2021) Gold, Uranium, Thorium and Rare Earth mineralization in the Kadiri Volcanic Province of eastern Dharwar Craton, India: An evaluation of mineralogical, textural and
	geochemical attributes. **Geological Journal** 56 (1) 359-381 https://doi.org/10.1002/gj.3959
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